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ATRIAL FIBRILLATION AFTER THORACIC RADIOTHERAPY FOR CANCER: EXAMINING DIFFERENCES IN CLINICAL CHARACTERISTICS AT TIME OF DIAGNOSIS COMPARED WITH THE GENERAL POPULATION

Poster Contributions
Poster Hall B1
Saturday, March 14, 2015, 10:00 a.m.-10:45 a.m.

Session Title: What's Going On in the World of Atrial Fibrillation?
Abstract Category: 4. Arrhythmias and Clinical EP: AF/SVT
Presentation Number: 1115-253

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Background: Thoracic external beam radiation therapy (XRT) for cancer is associated with a variety of long-term cardiotoxic effects and may predispose to development of atrial fibrillation (AF). We aimed to examine presenting characteristics and comorbidities at time of incident AF in XRT-treated cancer survivors to see if they differed from the general AF population.

Methods: In this retrospective analysis of 4,618 Olmstead County residents (Minnesota, USA) diagnosed with incident AF between 1980 and 2000, we identified all patients who had previously received curative thoracic XRT (>30 Gray) for cancer at Mayo Clinic since 1971. Baseline clinical characteristics and comorbidities at time of AF diagnosis in XRT-treated patients were compared with the general AF population.

Results: We identified 39 patients with incident AF previously treated with XRT for cancer (mean XRT-AF interval 4.6±4.9 years). Compared with the general AF population (n=4,579), patient age and rates of previous CAD, MI, PCI, valvular heart disease, and stroke at time of AF diagnosis were similar, although XRT-treated patients more frequently had prior CABG (18 vs 9%; p=0.04). The XRT cohort had lower rates of prior CHF (11 vs 29%; p=0.002), diabetes (5 vs 18%; p=0.03) and renal disease (5 vs 17%; p=0.05). The XRT cohort more frequently had prior atrial flutter (21 vs 11%; p=0.05), and AF heart rate at time of diagnosis was faster (122.2 vs 111.4 bpm; p=0.05) than the general AF population. XRT-treated patients were more likely to have undergone noncardiac surgery in the 15 days prior to AF diagnosis (16 vs 8%; p=0.02).

Conclusion: At time of AF diagnosis, patients with prior XRT are less likely to have a history of heart failure, and rates of concomitant coronary artery disease and valvular heart disease are the similar versus the general AF population. The higher frequency of concomitant atrial flutter suggests the mechanism of arrhythmogenesis may be different in XRT-treated patients. Faster heart rates at AF diagnosis may result from effects of XRT on the autonomic nervous system. The high percentage of patients with postoperative AF after noncardiac surgery in this population merits further study.